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Laura Ost (NIST)  
(301) 975-4034  
laura.ost@nist.gov

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### **Six Federal Agencies to Help Open the 'GATE' to Enhanced Manufacturing R&D**

Six federal agencies involved in manufacturing research and development (R&D) have launched a major effort to improve the exchange of information about their technical programs, and collaborate where appropriate, to enhance the payoffs from federal investments in this area.

The Government Agencies Technology Exchange in Manufacturing (GATE-M) will comprehensively address manufacturing R&D across the federal government. Agencies involved include the departments of Commerce (represented by the National Institute of Standards and Technology, or NIST), Defense, and Energy (represented by two separate entities: the National Nuclear Security Administration and the Office of Energy Efficiency and Renewable Energy), as well as the National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF).

GATE-M agencies, U.S. manufacturers and the economy could benefit from the agencies' expanded efforts to (1) exchange and leverage information about their technical programs; (2) facilitate collaboration when it makes sense to leverage resources to address particular issues; and (3) advance issues on an interagency, national level.

Two topics have been identified as initial priority areas in which all six GATE-M agencies have activities under way or could benefit from new activity. These areas are:

- **Intelligence in manufacturing**, a cross-cutting technology area that could transform how manufacturing is carried out in the future. Industry is only beginning to use capabilities made possible by intelligent, open-architecture controls, and activities in this area could have a major impact on supply chain cost, quality and reliability. In addition, agencies with product-oriented missions might be able to apply technology developed at other agencies to specific manufacturing problems.

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- **Nano- and micro-scale systems and technologies**, an emerging area of science and technology that promises to have a significant and broad impact on U.S. manufacturing as well as the nation's economy. This area presents many manufacturing and systems issues related to electrical and mechanical applications, assembly, and measuring techniques and tools. GATE-M activities in this area will be coordinated with the work of the National Nanotechnology Initiative.

To foster information exchange, GATE-M participants plan to conduct detailed interagency reviews of programs in the specific areas. They also may jointly sponsor workshops, promote and sponsor the development of "roadmaps" in specific technical areas, and conduct multi-agency brainstorming sessions. It is GATE-M's intent to involve the nation's manufacturing community of industry, government, academia and manufacturing associations in an integrated effort. Other technical areas of interest to the GATE-M agencies include environmentally focused technologies and processes; homeland and national security; manufacturing education; manufacturing process development—metals and composites; manufacturing quality and reliability (measurement and testing); and supply chain/systems integration and interoperability.

With respect to promotion, GATE-M plans to issue joint white papers or position papers that represent interagency positions. Other possible strategies include the issuance of joint "challenges" to the research community to tackle and solve difficult technical obstacles, the development of joint Small Business Innovative Research (SBIR) topics and awards, and joint support of studies by authoritative third parties to address technical issues.

For more information, contact David Stieren, NIST Manufacturing Engineering Laboratory, (301) 975-3197, [david.stieren@nist.gov](mailto:david.stieren@nist.gov). A copy of the GATE-M report is available online at [www.mel.nist.gov/pdfs/ir6950.pdf](http://www.mel.nist.gov/pdfs/ir6950.pdf).